

Claims

1. A device for inserting sticks (S) into moulds (12) for producing confectionery on a stick, having
- 5 - a mould conveyor (10) with moulds (12) arranged one behind the other in the conveying direction (a) thereof, which moulds (12) comprise mould cavities (20) which are arranged next to one another in rows and may be filled with confectionery mass (K),
  - 10 - a feeder (50), which is able to provide for each row of mould cavities (20) a corresponding row of sticks (S),
  - a rotary body (34), which may rotate in steps about an axis of rotation (36) arranged parallel to the rows of mould cavities (20), and
  - 15 - stick holders (42), which are arranged on the rotary body (34) at angular distances corresponding to the rotary steps thereof and comprise rows of radial channels (44), into each of which a stick (S) may be inserted radially from the outside inwards, such that they are able to hold the sticks
  - 20 (S) in a position in which the latter project radially away from the rotary body (34),
  - each stick holder (42), with each turn of the rotary body (34), finding itself opposite the feeder (50) in a first rotational angle position, in order to take therefrom a row
  - 25 of sticks (S), and in a last rotational angle position finding itself opposite a row of mould cavities (20), into each of which a stick (S) may be inserted by being pushed radially from the inside outwards out of its channel (44), characterised in that
  - 30 - the rotary body (34) has an annular cross section, which leaves an annular space (40) free around a shaft member (38) defining the axis of rotation (36),

- the radial channels (44) open into the annular space (40) and

- an ejector (64) common to all the stick holders (42) is arranged non-rotatably in the annular space (40) and

5 comprises plungers (66) for pushing the sticks (S) out of the channels (44), which plungers (66) are each able to enter the channels (44) directed towards a row of mould cavities (2) only when the rotary body (34) is at a standstill and may be withdrawn back into the annular space  
10 (40) before the next step of the rotary body (34).

2. A device according to claim 1, characterised in that

- the stick holders (42) each comprise two rows of channels  
15 (44, 44') for two rows of sticks (S),

- only a first row of channels (44) of the stick holders (42) is in each case located opposite the above-mentioned feeder (50) in the first rotational angle position of the rotary body (34), in order to take a first row of sticks  
20 (S) therefrom,

- adjacent the rotary body (34) there is arranged a second feeder (50'), opposite which the second row of channels (44') of the stick holders (42) in each case finds itself in a second rotational angle position of the rotary body  
25 (34), in order to take a second row of sticks (S), and

- each mould (12) contains two rows, arranged one behind the other in the conveying direction (a) of the mould conveyor (10), of mould cavities (20, 20') arranged next to one another, into which the sticks (S) of the first and  
30 second rows respectively are intended to be inserted.

3. A device according to claim 2, characterised in that

the second feeder (50') has its own, second storage container (30') associated with it.

4. A device according to one of claims 1 to 3,

5 characterised in that each feeder (50, 50') comprises a cross slide (52), which

- closes the associated storage container (30, 30') at the bottom,

10 - may be moved to and fro transversely of the radial channels (44, 44') and

- comprises slots (56) open towards the inside of the storage container (30, 30'), which slots (56) are each aligned with one of the radial channels (44 or 44') in one of the stick holders (42) of the rotary body (34) after  
15 each step of the rotary body (34) when the cross slide (52) is in a rest position.

5. A device according to one of claims 1 to 4,

20 characterised in that the radial channels (44, 44') contain spring-loaded clamping members (46), which prevent the sticks (S) from slipping out prematurely.

6. A device for inserting sticks (S) into moulds (12) for producing confectionery on a stick, having

25 - a mould conveyor (10) with moulds (12) arranged one behind the other in the conveying direction (a) thereof, which moulds (12) comprise mould cavities (20) which are arranged next to one another in rows and may be filled with confectionery mass (K),

30 - a feeder (50), which is able to provide for each row of mould cavities (20) a corresponding row of sticks (S),

- a centring device being arranged on each mould (12), which device comprises a centring hole (28) over each mould cavity (20) for the associated stick (S), characterised in that

5 - the centring device takes the form of a lid (24) which may be positioned on the associated mould (12),

- a lid positioning device (70) is arranged upstream, in the conveying direction, of the area in which the sticks (S) are inserted into the moulds (12),

10 - a lid removing device (72) is arranged downstream of the above-mentioned area in the conveying direction, and

- the lid removing device (72) is connected to the lid positioning device (70) by a lid return device (74).

15 7. A device according to claim 6, together with one of claims 1 to 5,

characterised in that the mould conveyor (10), insofar as it is conveying moulds (12) covered with lids (24), forms together with the lid removing device (72), the lid return device (74) and the lid positioning device (70) a  
20 continuous conveying circuit surrounding the rotary body (34).

8. A device according to claim 6 or claim 7,

25 characterised in that the lid positioning device (70) and the lid removing device (72) each comprise two paternoster-like arrangements, which are positioned one on each side of the mould conveyor (10) and are formed in such a way by lower and upper return pulleys (76, 78) and endless  
30 conveying members (80) running thereover with spacedly arranged lid supports (82) that lid supports located in same height pairs are in each case able jointly to support one lid (24) and to transfer it in a horizontal position

between the mould conveyor (10) and the lid return device (74).

9. A device according to claim 8, characterised in that

5 - the lid return device (74) comprises a pair of guide rails (88), with which a pair of lid supports (82) in the area of the upper return pulleys (78) of each of the lid positioning device (70) and the lid removing device (72) may be brought simultaneously into alignment, and

10 - the two paternoster-like arrangements of the lid removing device (72) are connected together in the area of their upper return pulleys (78) by a crosshead (92), which bears a drive (94, 96) movable to and fro, by which the lids (24) may be displaced in steps, lid by lid, from one pair of lid  
15 supports (82) of the lid removing device (72) onto the guide rails (88) and from these onto a pair of lid supports (82) of the lid positioning device (70).